

High beam

The latest 3D imaging technology has arrived in Australia, thanks to one woman's dodgy lower jaw. Rob Johnson reports

Pamela Gilbert's teeth led her to digital imaging. The managing director of Dental and Medical Diagnostic Imaging (DMDI)—a Melbourne 3D imaging centre—was inspired to start the business during her own five-year odyssey through the dental profession. But can her technology—which is admittedly pretty impressive—compete with the growing desire of dentists to own their own CT scanners?

DMDI is only a couple of months old, and claims it's the first fully licensed and accredited facility for dental and medical diagnostic cone beam CT in the country. Technology is on DMDI's side as well—the centre boasts the only Morita Accutomo 170 cone beam CT in the Southern Hemisphere, as well as the 3De Veraviewpocs.

The issue DMDI really has to tackle, however, is one

of being a credible digital imaging facility, which is why DMDI has focussed on dental imaging and employed trained and licensed radiographers and radiologists, as well as offering cutting-edge technology. Given the legal implications of misreading a CT scan, such professional backup is vital.

Gilbert originally had twin motivations for starting DMDI and going to the expense of purchasing the Accutomo 170 cone beam CT.

"When I was going through my own dental treatment over five years, I was just thinking about digital technology in general, and that's what started me on this path," she reveals.

Her own dental treatment sprung from having a lower jaw that was, in her own words, "not ever any good".

"I used to describe my lower jaw and teeth as resembling tombstones," she

explains. "I knew that it was becoming non-functioning as I grew older, and I thought I could diagnose myself. I had gaps between the teeth, and had a couple of teeth removed many years ago.

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*Pamela Gilbert,
Managing Director, DMDI*

I went off to talk to a friend who was a dentist. He said he could treat it to a degree, but it wouldn't necessarily make my jaw more functional, and he wanted to have an orthodontist's opinion. So he sent me to an ortho, and I had braces for two years, had one tooth taken out,

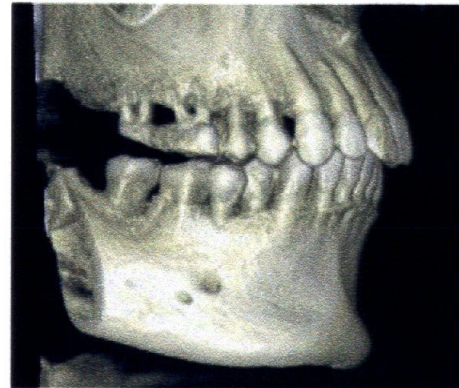
three implants and a bone graft to boot, because the bone had atrophied in the lower jaw."

The whole process took several years, during which time she would question the specialists she saw about what (if any) digital system they were using. "As a result of that," she says, "I started to become more interested in what was available."

She had a couple of natural advantages over others who would be pondering a similar path. Her business and marketing consultant, Roy Hardman, is an external consultant for the Therapeutic Goods Administration, and regulatory advisor for the dental and medical industry. They talked about the various issues surrounding CT scans and equipment extensively. The second was she had a large pool of medical and dental contacts from 10 years working for the Victo-

PHOTOGRAPH: STOKKER





DMDI's cone beam offers imagery at a much higher resolution than your average cone beam, making treatment plans easier and more accurate.

rian Services Commissioner (the Health Ombudsman). And thirdly, she knew how to research radiology services—by scanning publicly available data about Location Specific Practice Numbers (LSPN): registered radiology sites are allocated an LSPN, which is required to be submitted as part of each Medicare claim for diagnostic imaging or radiation oncology services.

The LSPN recorded on the claim must be current

on the date of service (ie the registration must be active, not suspended or cancelled). In addition, Medicare benefits are only payable where there is equipment recorded for the site appropriate to the claim, and when it's a fully accredited service under the mandatory regulations.

After two trips to the International Dental Exhibition (DX) in Cologne in 2007 and this year,

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Susan Lubber, practice manager

Gilbert settled on the Morita Accutomo 170 cone beam CT and the 3De Veraviewepocs for DMDI. The particular advantages, says DMDI practice manager Susan Lubber, are low radiation and high resolution: "The radiation dose from our machine is as little as 40 microSieverts, or the same as two routine chest X-rays, while a medical CT dentascans starts from about 600 microsieverts. The voxel size of our images is 0.08mm, giving us a higher resolution than any other CBCTs in the market."

This provides real patient and practitioner benefits over your traditional CBCT hybrids and other devices, she says, because the image size allows you to see detail around the tooth and ligaments which just isn't visible with other systems. On top

of that, because the machine is larger than other CBCTs in the market, it's a nicer, more comfortable experience for the patient (especially those prone to claustrophobia).

There is also a level of safety involved—less so for the patient than the dentist. Over the past month, Melbourne newspapers have been reporting on Medicare crackdowns around medical specialists profiting from referring patients to radiology businesses they part-own, in a practice the government has asked the Australian Competition and Consumer Commission to investigate.

Such issues could be a strong selling point for all radiology services, but DMDI are focussing more on growing their technological capabilities than anything else. They recently secured a licence with Dolphin Imaging and Management Solutions for their software, which Gilbert says offers even clearer images, which leads to the possibility of making better, more accurate appliances. Susan Lubber adds, "In conjunction with sleep apnoea specialists, we're also trialling new protocols for sleep apnoea. With the Dolphin software we can do 3D scans of the airways. In conjunction with specialists, I'm in the process of developing protocols where we can scan TMJ joints and analyse airways and build up our services in the treatment of sleep apnoea."

In the meantime, the company is offering information sessions for dentists to familiarise themselves with the possibilities of the technology. There are also plans for DMDI to expand in Australia and New Zealand, and build their radiography and radiology staff to increase the speed and reliability of their specialist services. □